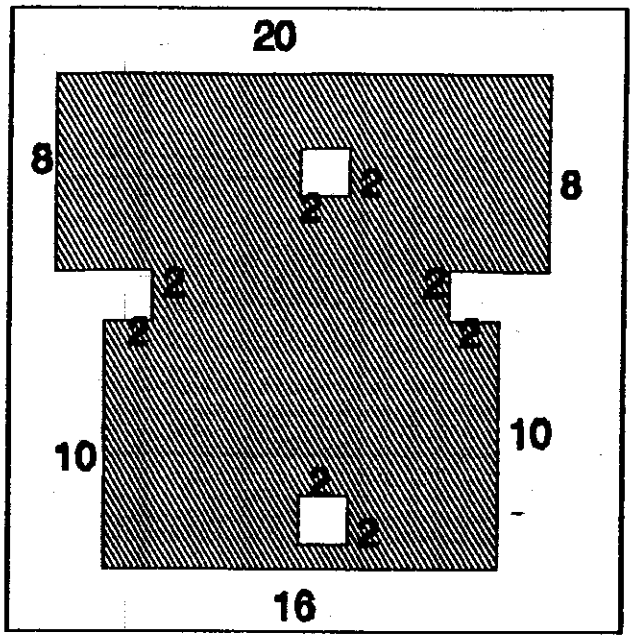
GEOMETRY TEAM TEST QUESTION 1 FEB. 8, 1992

1. Find the area of the shaded region. All intersecting lines form right angles.



GEOMETRY TEAM TEST QUESTION 2 FEB. 8, 1992

2. Find the measure of an interior angle of a regular polygon that has 102 sides.

GEOMETRY TEAM TEST QUESTION 3 FEB. 8, 1992

3. Find the area of the polygon formed by connecting the following cordinates in order.

(0,5), (5,0), (0,-5), (-5,0)

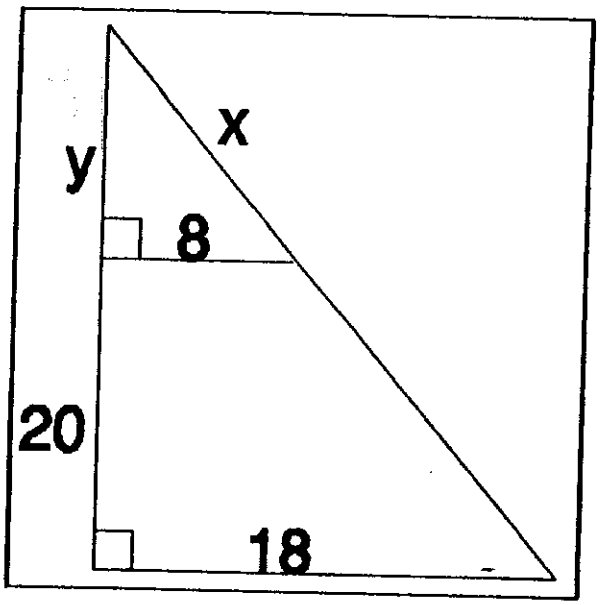
GEOMETRY TEAM TEST QUESTION4 FEB. 8, 1992

4. Let n = the maximum number of diagonals that a regular nonagon can have. Let s = the number of perfect squares between 500 and 1000. Let r = the maximum number of regions that can be formed by five lines in a plane.

Find s + r - n.

GEOMETRY TEAM TEST QUESTION 5 FEB. 8, 1992

5. Find x.



GEOMETRY TEAM TEST QUESTION 6 FEB. 8, 1992

6. The diagonal of a square is the same length as the apothem of an equilateral triangle. Find the ratio of the area of the triangle to the area of the square.

GEOMETRY TEAM TEST QUESTION 7 FEB. 8, 1992

7. A man starts at a fixed point and then walks...

4 meters north, 11.5 meters west, 12 meters south, 22.5 meters east, and finally 13 meters south.

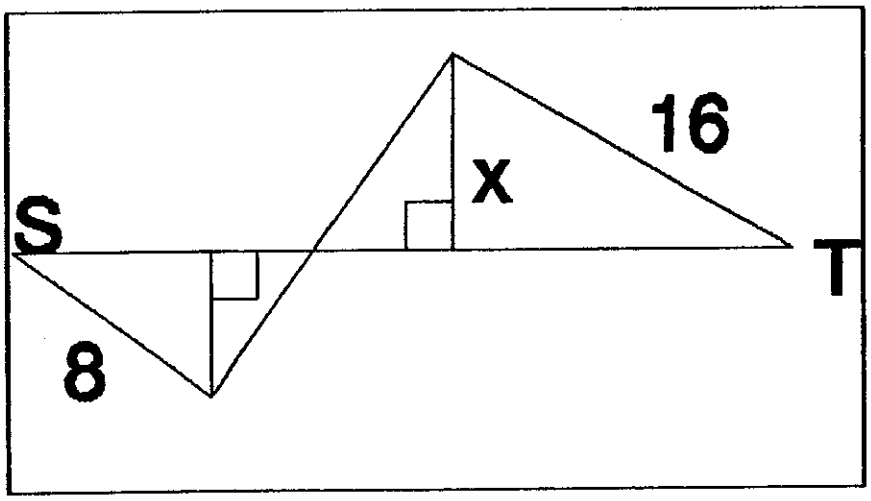
How many meters is he from the starting point?

GEOMETRY TEAM TEST QUESTION 8 FEB. 8, 1992

8. The legs of a right triangle are 24 and 32. Find the length of the altitude to the hypotenuse.

GEOMETRY TEAM TEST QUESTION 9 FEB. 8, 1992

9. In the diagram, all triangles are right triangles. ST = 30. Find x.

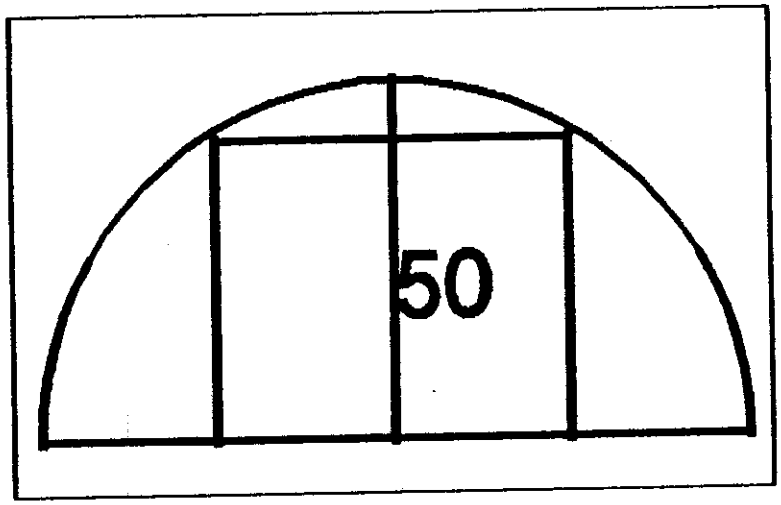


GEOMETRY TEAM TEST QUESTION 10 FEB. 8, 1992

10. An isoceles triangle is inscribed in a circle. If the vertex angle has a measure of 30 and intercepts an arc with a length of 25 units, what is the length of the diameter of the circle?

GEOMETRY TEAM TEST QUESTION 11 FEB. 8, 1992

11. The radius of the semicircle is 50. Find the length of the diagonal of the square.



GEOMETRY TEAM TEST QUESTION 12 FEB. 8, 1992

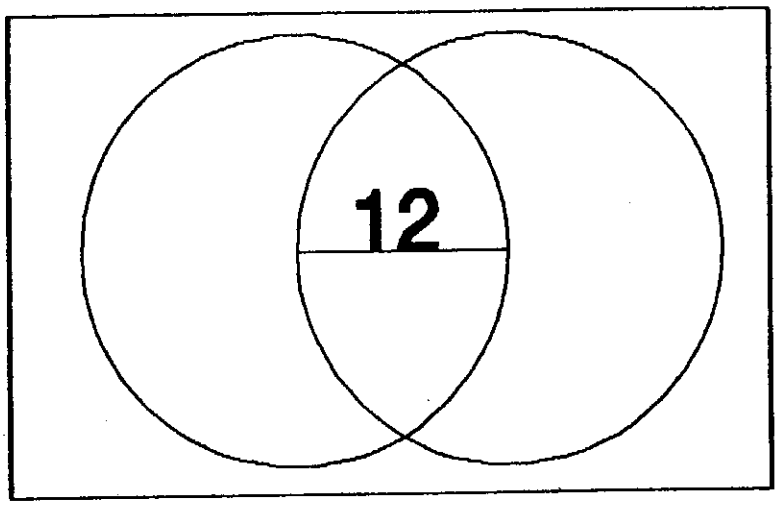
12. The length, width, and altitude of a box are in a ratio of 7 : 5 : 1. If the longest stick that can be placed in the box has a length of 10, what is the width of the box?

GEOMETRY TEAM TEST QUESTION 13 FEB. 8, 1992

13. An equilateral triangle is inscribed in a circle which is inscribed in a square. If the length of the side of the triangle is 9, find the ratio of the circumference of the circle to the length of the side of the square.

GEOMETRY TEAM TEST QUESTION 14 FEB. 8, 1992

14. In the diagram below, the two circles are congruent and each one passes through the center of the other. If the radius of each circle is 12, find the area of the region where the circles overlap.



GEOMETRY TEAM TEST QUESTION 15 FEB. 8, 1992

15. Find the diameter of the circle.